CLAIMS:

1. A die ejector system for removing a die from an adhesive surface, comprising:

an ejector tool that is operative to move relative to the die whereby to push the die;

a shaft for holding the ejector tool;

a linear motor comprising a forcer and a stator, wherein the forcer is coupled to the shaft and is movable relative to the stator; and

a die pick-up device for removal of the die from the adhesive surface after the die is pushed by the ejector tool.

2. A die ejector system as claimed in claim 1, wherein the forcer comprises coils adapted to carry current.

3. A die ejector system as claimed in claim 1, wherein the stator comprises permanent magnets.

4. A die ejector system as claimed in claim 1, including a flexure bearing coupled to the shaft for guiding movement of the ejector tool relative to the die.

5. A die ejector system as claimed in claim 4, including a second flexure bearing that is coupled to the shaft.

6. A die ejector system as claimed in claim 5, wherein the flexure bearing and the second flexure bearing are positioned on opposite sides of the linear motor.

7. A die ejector system as claimed in claim 4, wherein an axis of a pushing force generated on the shaft is aligned with an axis along which flexure bearing is adapted to flex.

8. A die ejector system as claimed in claim 4, wherein the flexure bearing comprises flexing portions for facilitating relative axial motion of non-flexing portions of the flexure bearing.

9. A die ejector system as claimed in claim 8, wherein the flexure bearing includes spacers positioned adjacent and covering at least part of the non-flexing portions for facilitating mounting of the non-flexing portions to one or more mounting surfaces.

10. A die ejector system as claimed in claim 4, wherein the flexure bearing comprises a flexible disc.

11. A die ejector system as claimed in claim 4, including regularly-shaped slots fabricated on the flexure bearing with polar symmetry.

12. A die ejector system as claimed in claim 1, wherein the linear motor is cylindrically-shaped.

13. A die ejector system as claimed in claim 1, including a force sensor coupled to the shaft for detecting a force exerted on the ejector tool.

14. A die ejector system as claimed in claim 1, including a position sensor coupled to the shaft for providing position feedback whereby to determine a position of the ejector tool.

15. A method for removing a die from an adhesive surface, comprising the steps of:

providing an ejector tool that is movable relative to the die;

mounting the ejector tool onto a shaft;

coupling the shaft to a forcer of a linear motor that is movable relative to a stator of the linear motor;

moving the forcer relative to the stator whereby to push the ejector tool against the die; then

removing the die from the adhesive surface.

16. A method as claimed in claim 15, wherein the forcer comprises coils adapted to carry current.

17. A method as claimed in claim 15, wherein the stator comprises permanent magnets.

18. A method as claimed in claim 15, including coupling a flexure bearing to the shaft and using the flexure bearing to guide movement of the ejector tool relative to the die.

19. A method as claimed in claim 18, including coupling a second flexure bearing to the shaft.

20. A method as claimed in claim 19, including positioning the flexure bearing and the second flexure bearing on opposite sides of the linear motor.

21. A method as claimed in claim 18, including aligning an axis of a pushing force generated on the shaft with an axis along which flexure bearing is adapted to flex.

22. A method as claimed in claim 18, wherein the flexure bearing comprises a flexible disc.

23. A method as claimed in claim 15, including detecting a force exerted on the ejector tool.

24. A method as claimed in claim 15, including providing position feedback for determining a position of the ejector tool.